CLEAN VERSION OF AMENDMENTS

IN THE SPECIFICATION

1. Please amend the fourth paragraph on column 1, from line 27 through line 34, to read as follows:

CIE defines the three primary colors according to wavelengths, thus light of 700 nm (nanometers) is defined as R, the light of 546 nm is defined as G, and the light of 435 nm is defined as B. CIE uses color matching where mix ratios of the three primary colors are calculated using a color matching measurement device to obtain various colors, thus colors are created by mixing the three colors according to calculated ratios.

2. Please amend the seventh paragraph on column 1, from line 54 through line 64, to read as follows:

For example, when G and B are reduced from the value of a 9300°K (Kelvin) white, the R value becomes relatively large and reddish colors are displayed. The user can utilize different standard white value in the manner that he or she stores different standard white values in memory and selects from them. For this, monitor manufacturers provide several limited colors, or values, which are most frequently utilized by the users. High quality monitors are designed so that the users

can adjust the colors, but inaccurate color values are utilized because they must select them depending on their own eyes.

3. Please amend the first paragraph on column 3, from line 1 through 33, to read as follows:

As shown in FIG. 1, a data input unit 10 includes a temperature sensing unit 11 for generating a temperature signal corresponding to the ambient temperature of the monitor, and a keypad 12 through which users select an automatic mode or manual mode of operation and input color temperature values during the manual mode of operation. A microcomputer 20 receives the ambient temperature generated by temperature sensing unit 11 or the color temperature signals generated by keypad 12, converts the temperature signal into a digital signal, and processes data corresponding to the temperature signals using stored color temperature data and a color curve control program. A digital-to-analog converter (D/A converter) 30 receives digital R, G and B video gain and cutoff signals corresponding to the temperature signals from microcomputer 20, and converts the digital signals into analog signals. An on screen display (OSD) unit 40 processes OSD data which is serially transmitted from microcomputer 20, to display R, G and B OSD signals on the screen for the users. A video pre-amplifying unit 50 amplifies R, G and B video signals generated by a computer graphic adaptor (not shown) according to the levels of the R; G and B gain signals transmitted by D/A converter 30. A multiplexer 60 selects either the R, G and B video signals from video pre-amplifier 50 or the R, G and B OSD signals from OSD unit 40 in response to an enable

signal OSD_EN. A video main-amplifying unit 70 amplifies the R, G and B video signal or the R, G and B OSD signals, transmitted by multiplexer 60, according to the R, G and B cutoff levels generated by D/A converter 30. A cathode-ray tube (CRT) 80 produces beams in response to the amplified R, G and B signals output by video main-amplifying unit 70, through R, G and B cathodes to display the signals.

4. Please amend the second paragraph on column 3, line 34 through line 42, to read as follows:

The operation of the above circuit is now described. The ambient temperature of the monitor is sensed by the temperature sensor of temperature sensing unit 11 in data input unit 10. Since an ambient temperature signal generated by temperature sensing unit 11 is weak, it is amplified by an operational amplifier OP1 and then transmitted to microcomputer 20. The operational amplifier OP1 is connected with the temperature sensing unit 11 to form an amplified temperature sensing signal unit 90. Additionally, color temperature signals, selected by a user using keypad 12 of data input unit 10 during a manual mode, are input to microcomputer 20.

5. Please amend the second complete paragraph on column 4, from line 14 through line 26, to read as follows:

OSD unit 40 receives the OSD data for displaying characters representing the sensed ambient temperature by temperature sensing unit 11 or the color temperature selected by a user through keypad 12. OSD unit 40 also receives horizontal (H-SYNC) and vertical sync (V-SYNC) signals transmitted through a computer graphic adaptor (not shown). The data which is input to OSD unit 40, is generated as signals R_OSD, G_OSD, B_OSD, and OSD_EN in synchronization with the horizontal and vertical sync signals from the graphic adaptor. The signals generated by OSD unit 40 are transmitted to multiplexer 60. This operation of displaying the information and color signals from microcomputer 20 on the screen of the monitor, is described below.

6. Please amend the third complete paragraph on column 4, from line 27 through line 36, to read as follows:

The R, G and B gain signals (R_Gain, G_Gain, B_Gain) generated by microcomputer 20 are converted into analog signals by D/A converter 30. The analog R, G and B gain signals (R_Gain, G_Gain, B_Gain) and R, G and B video signals from the computer graphic adaptor are transmitted to video pre-amplifying unit 50. Red video (R) and red gain (R_Gain) signals are supplied to operational amplifier OP2, green video (G) and green gain (G_Gain) signals are supplied to operational amplifier OP3, and blue video (B) and blue gain (B_Gain) signals are supplied to the operational amplifier OP4.

7. Please amend the fourth complete paragraph on column 4, from line 37 through line 48, to read as follows:

The R, G and B video signals, which are supplied to each operational amplifier of video pre-amplifying unit 50, are amplified to the levels of the red, green and blue gain signals (R_Gain, G_Gain, B_Gain). The R, G and B video signals, amplified by video pre-amplifying unit 50, are transmitted to multiplexer 60. Multiplexer 60 receives signals OSD_ R, OSD_ G, OSD_B, and OSD_EN from OSD unit 40 with the pre-amplified R, G and B video signals. R video signal and signal OSD_R are supplied to operational amplifier OP5, G video signal and signal OSD_G are supplied to operational amplifier OP6, and B video signal and signal OSD_B are supplied to operational amplifier OP7.

8. Please amend the fifth complete paragraph on column 4, from line 49 through line 62, to read as follows:

The R, G and B video signals or the OSD signals, R_OSD, G_OSD, and B_OSD, of operational amplifiers OP5-OP7 are transmitted to video main-amplifying unit 70 in response to signal OSD_EN. At this time, only when multiplexer 60 is turned ON by OSD_EN, are the OSD signals, OSD_R OSD_G, and OSD_B, transmitted from the operational amplifiers of multiplexer

60 to video main-amplifying unit 70. The OSD_EN signal is generated only when the automatic or manual color correction modes are selected by the user using keypad 12, at all other times the R, G and B video signals output from the computer graphic adaptor is displayed according to the current red, green and blue gain (R_Gain, G_Gain, B_Gain) and cutoff (R_Cutoff, G_Cutoff, B_Cutoff) signals applied to amplifiers 50 and 70, respectively.

9. Please amend the paragraph bridging column 4 and 5, from line 63 on column 4 throgh line 12 on column 5, to read as follows:

Video main-amplifying unit 70 receives the R, G and B video or OSD signals selected according to the signal OSD_EN, and red, green and blue cutoff signals (R_Cutoff, G_Cutoff, B_Cutoff) generated by D/A converter 30. R video or R_OSD, and R_Cutoff signals are supplied to operational amplifier OP8, G video or G_OSD, and G_Cutoff signals are supplied to operational amplifier OP9, and B video or B_OSD, and B_Cutoff signals are supplied to operational amplifier OP10 in video main-amplifying unit 70. The R, G and B video or OSD signals, which are transmitted to operational amplifiers OP8-OP10 of video main-amplifying unit 70, are amplified according to the levels of the color cutoff signals (R_Cutoff, G_Cutoff, B_Cutoff), transmitted by D/A converter 30. The amplified signals are sent to corresponding cathodes R (R.K), G (G.K) and B (B.K) for display on the screen of the monitor through CRT (Cathode-ray tube) 80.

10. Please amend the fifth complete paragraph on column 5, from line 38 through line 54, to read as follows:

As shown in FIG. 3, a range of temperatures (T_ len) is established according to T_MIN (minimum temperature) and T_MAX (maximum temperature) in factory mode during manufacture (step S91). When the range of temperatures, T_len, is established, red, green and blue gain and cutoff values corresponding to the respective T_MIN and T_MAX are produced (step S92). The red, green and blue gain and cutoff data corresponding to the range of temperature, T_len, is stored (step S93). A user selects a color correction mode as one of an automatic mode and a manual mode (step S94). The sensed ambient temperature is detected by microprocessor 20 to be compared to the stored values (step S95), when the automatic mode is selected in step S94. A color temperature value is entered by a user to be compared to the stored values (step S96) when the manual mode is selected in step S94. Red, green and blue gain and cutoff values corresponding to the temperature range, T_len, are read (step S97) following steps S95 or S96.

11. Please amend the paragraph bridging column 5 and 6, from line 57 on column 5 through line 19 on column 6, to read as follows:

When establishing the temperature range, T_len, in the factory mode during manufacture, the temperature range is defined with minimum and maximum Kelvin temperatures. When the

minimum and maximum temperatures are established in the factory mode, their coordinates are calculated (step S91). At step S92, red, green and blue gain and cutoff values corresponding to the minimum and maximum temperatures, T_MIN and T_MAX, are calculated. For example, when the minimum temperature T_MIN is set at 5000°K, coordinates corresponding to 5000°K are calculated. When the maximum temperature T_MAX is set at 9300°K, coordinates corresponding to 9300°K are calculated. Red, green and blue gain and cutoff values corresponding to the temperature range between minimum and maximum temperatures T_MIN and T_MAX, is generated using these coordinates. Additionally, a color curve value S, which effects the properties of the curve, is a value fixed during manufacture according to CRT (Cathode-ray tube) properties. When the calculated red, green and blue gain and cutoff data corresponding to the temperature range between minimum and maximum temperatures, T_MIN and T_MAX, are stored at step S93, the operation in a factory mode is completed. When the calculated values are stored at step S93, a temperature is entered according to either a sensed ambient temperature or by the user at steps S95 and S96, respectively, as discussed above following selection of either an automatic or manual mode of color correction in step S94. Then, the red, green and blue gain and cutoff values corresponding to the temperature range, T_len, are read (step S97) following steps S95 or S96.

12. Please amend the first complete paragraph on column 6, from line 20 through line 27, to read as follows:

Coordinates *xc* corresponding to the input temperature are calculated (step S98) from the following formula using the color curve value S:

$$xc=T-(x-T\_len)\cdot(x+T\_len)\times S$$

where, T is a predetermined temperature, *x* is a temperature which is substituted for medium temperature, T_len is a range of temperature, and S is the slope of the temperature curve.

13. Please amend the second complete paragraph on column 6, from line 28 through line 59, to read as follows:

When the coordinates of *xc* corresponding to the predetermined temperature are obtained, color temperature data Rx, Gx, and Bx, corresponding to the predetermined temperature are calculated. The data is obtained using the following formulas:

$$Rx=(Rmin\times(T\_MAX-xc)+Rmax\times(xc-T\_MIN))/(T\_MAX-T\_MIN)$$

$$Gx=(Gmin\times(T\_MAX-xc)+Gmax\times(xc-T\_MIN))/(T\_MAX-T\_MIN)$$

Bx=(Bmin×(T_MAX-xc)+Bmax×(xc-T_MIN))/(T_MAX-T_MIN)

where, the calculated color temperature data, Rx, Gx, and Bx, are digital signals. The color temperature data (Rx, Gx, and Bx) is converted onto red, green and blue gain and cutoff data. That is, video signal gains and cutoff values (R_Gain, G_Gain, B_Gain R_Cutoff, G_Cutoff and B_Cutoff) are calculated from the values, T_MIN and T_MAX, according to the temperature which is input to microprocessor 20 in steps S95 or S96. The gain and cutoff values are obtained (step 99) using the following formulas:

R-Gain=(Rmin×(T_MAX-xc)+Rmax×(xc-T_MIN))/(T_MAX-T_MIN)

G-Gain=(Gmin×(T_MAX-xc)+Gmax×(xc-T_MIN))/(T_MAX-T_MIN)

B-Gain=(Bmin×(T_MAX-xc)+Bmax×(xc-T_MIN)/(T_MAX-T_MIN)

R_Cutoff=(Rmin×(T_MAX-*xc*)+Rmax×(*xc*-T_MIN)/(T_MAX-T_MIN)

G_Cutoff=(Gmin×(T_MAX-*xc*)+Gmax×(*xc*-T_MIN)/(T_MAX-T_MIN)

B_Cutoff=(Bmin×(T_MAX-*xc*)+Bmax×(*xc*-T_MIN)/(T_MAX-T_MIN)

14. Please amend the second paragraph on column 7, from line 10 through line 15, to read as follows:

Consequently, the present invention adjusts colors displayed on a monitor using red, green and blue gain and cut-off signals which change according to a color curve in a color space in order to adjust colors as a user wants, thereby improving the color function which enables the user to easily adjust colors in the state he or she wants.